

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO. FILING DATE		FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/700,633 11/05/2003		Seo-Young Choi	6161.0110.US	5366		
58027	7590 05/15/2006		EXAMINER			
H.C. PARK 6 8500 LEESBU	& ASSOCIATES, PLC	HINES, ANNE M				
SUITE 7500	JRUPIRE		ART UNIT	PAPER NUMBER		
VIENNA, VA 22182			2879			
			DATE MAILED: 05/15/2006	ς.		

Please find below and/or attached an Office communication concerning this application or proceeding.

1) ⊠ Responsive to communication(s) filed on 21 April 2006. 2a) ☐ This action is FINAL. 2b) ⊠ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ☑ Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) ☑ Claim(s) 11,15-18 and 20 is/are allowed. 6) ☑ Claim(s) 13-6 and 10 is/are rejected. 7) ☑ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) ☐ are subject to restriction and/or election requirement. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☑ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in aboyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☑ All b) ☐ Some * o) ☐ None of: 1. ☑ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). *See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☑ Notice of References Cited (PTO-892) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB(08)			Application	No.	Applicant(s)	Y				
Examiner Anne M. Hines — The MAILING DATE of this communication appears on the cover sheet with the correspondence address — Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Exercisions of time may be related under the positions of 3° CFR 1.736(3), in no event, however, may a reply be timely filled. Exercision of time may be related under the positions of 3° CFR 1.736(3), in no event, however, may a reply be timely filled. Exercision of time may be related under the positions of 3° CFR 1.736(3), in no event, however, may a reply be timely filled. Exercision of time may be set of extended period for reply will, by fastuce, cause the application to become ABANDONED (19.13 °C, 1313) overed patent term adjustment. Set 3° CFR 1.704(6). Status 1) ■ Responsive to communication(s) filed on 21.Agril 2006. 2a) □ This action is FINAL. 2b) □ This action is followance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 °O.G. 213. Disposition of Claims 4) □ Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s)			10/700,633			3				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address — Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extension for the rays be available under the provision of 37 CFR 1-18(i), in no event, mover, may a reply but beinty field If NO period for reply is appointed above, the maximum statutory spends will apply and well expres SIX (8) MONTHS from the mailing date of this communication. Failur to reply when the set or excended period for reply will, by status, cause the application to become ABANDOFIC 31 U.S. C. § 1373. Any reply received by the fine set or excended period for reply will. by status, cause the application to Decome ABANDOFIC 31 U.S. C. § 1373. Any reply received by the difference of the communication of the communication. Pallur to reply which the set or excended period for reply will. by status, cause the application Decome ABANDOFIC 31 U.S. C. § 1373. Any reply received by the difference of the communication of the communication. Primary reply received by the communication of the communication of the communication. Primary reply received by the communication of the communication of the communication. Primary reply received by the communication of the communication of the communication of the communication. Primary reply reply reply reply reply reduce any variety of the communication. Primary reply rep	Office Action Summary									
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Stereption of them may be available under the provisions of 37 CPR. 1.136(a). In the event, however, may a reply be timely filled. Stereption of them may be available under the provisions of 37 CPR. 1.136(a). In the event, however, may a reply be timely filled. If NO period for reply is specified above. The maximum statution period with apply and wit expire 30 Kg (b) MONTHS from the making date of this communication. Failure to reply within the set of extended period for reply will, by statule, cause the application to become AbADDONED (30 U.S. 2 § 133). Any tropy invented by the William that the practice of this communication, even if timely filled, may reduce any control period to the specification is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ○ Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5 ○ Claim(s) 1,15-18 and 20 is/are rejected. 7 ○ Claim(s) 2,13-6,20 and 10 is/are rejected. 7 ○ Claim(s) 2,13-6,20 and 10 is/are rejected. 7 ○ Claim(s) 2,13-6,20 and 10 is/are rejected. 7 ○ Claim(s) 2,20 and 20 is/are by the Examiner. 10 ○ The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. 10 ○ The provision of the control of the drawing(s) by clocked to formal period to the drawing(s) by clocked to formal per			Anne M. Hir	es	2879					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, RROM THE MAILING DATE OF THIS COMMUNICATION. Examinors of two many to available under the povisions of 37 CFR 1.18(i), in ne event, nower, may a regive by be thely filled If NO period for rapy is a specified above, the maintain statutory period will apply and will expire SIX (8) MONTHS from the maining date of this communication. Pallet for reply within the set to residende period for reply likely status, case the application become ABANDOFO (34 U.S.C. § 133). Any reply received by the Office later than times more maintained date of this communication, even if timely filled, may reduce any event period them alignature. 1) Responsive to communication(s) filled on 21 April 2006. 22) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1.3-6.9-11.15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 1.115-18 and 20 is/are allowed. 6) Claim(s) 1.3-6 and 10 is/are rejected. 7) Claim(s) 2 is/are objected to by the Examiner. 10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) more of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority doc		mmunication app	pears on the d	over sheet with the d	orrespondence add	ress				
Extensions of time may be available under the provisions of 37 CFR 1.15(s). In no event, however, may a reply be limely filed after SIX (s) (MONTHS from the mailing date of this communication. Falue to reply within the set or extended period for reply will, by absidute, cause the application to become ABANDONED (25 U.S.C. § 133). Any reply received by the Office after than three months after the mailing date of this communication, short provided by the Office after than three months after the mailing date of this communication, even if timely filed, may reduce any seamed patent term adjustment. See 37 CFR 1.704(s) Status 1) □ Responsive to communication(s) filed on 21 April 2006. 2a) □ This action is FINAL. 2b) □ This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) □ Claim(s) 1.3-6.9-11.15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) □ is/are vilhdrawn from consideration. 5 □ Claim(s) 1.15-18 and 20 is/are allowed. 6 □ Claim(s) 1.15-18 and 20 is/are allowed. 6 □ Claim(s) 9 is/are objected to. 8 □ Claim(s) 9 is/are objected to. 8 □ Claim(s) 9 is/are objected to. 9 □ The specification is objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) □ The earth or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12 □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) □ All by □ Some * ○ □ None of: 1.□ Certified copies of the priority documents have been received. 2.□ Certified copies of the priority documents have been received in Application No. 3.□ Cop	A SHORTENED STATUTORY PER) DAYS,				
1) ⊠ Responsive to communication(s) filed on 21 April 2006. 2a) ☐ This action is FINAL. 2b) ⊠ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ☑ Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) ☑ Claim(s) 11,15-18 and 20 is/are allowed. 6) ☑ Claim(s) 13-6 and 10 is/are rejected. 7) ☑ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) 9 is/are objected to by the Examiner. 10) ☑ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☑ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☑ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☑ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☑ All b) ☐ Some * o ☐ None of: 1. ☑ Certified copies of the priority documents have been received. 2 ☐ Certified copies of the priority documents have been received in Application No 3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). *See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☑ Notice of References Cited (PTO-892) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB	 Extensions of time may be available under the p after SIX (6) MONTHS from the mailing date of t If NO period for reply is specified above, the mailing to reply within the set or extended period Any reply received by the Office later than three 	rovisions of 37 CFR 1.13 his communication. kimum statutory period w for reply will, by statute, months after the mailing	36(a). In no event will apply and will e c, cause the applica	, however, may a reply be tir expire SIX (6) MONTHS from ation to become ABANDONE	nely filed the mailing date of this con (35 U.S.C. § 133).	nmunication.				
2a) This action is FINAL. 2b) This action is non-final. 3 Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4 Claim(s) 1.3-6.9-11, 15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5 Claim(s) 11.15-18 and 20 is/are allowed. 6 Claim(s) 1.3-6 and 10 is/are rejected. 7 Claim(s) 1 is/are objected to. 8 Claim(s) 1 is/are objected to. 8 Claim(s) 1 is/are objected to restriction and/or election requirement. Application Papers 9 The specification is objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some colly None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of Prefsperson's Patent Drawing Review (PTO-948) 3) Information Discosure Statement(s) (PTO-1449 or PTO/SB/08)	Status	•								
3 Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4 Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5 Claim(s) 1,1.5-18 and 20 is/are allowed. 6 Claim(s) 1,1.5-18 and 20 is/are allowed. 6 Claim(s) 9 is/are objected to. 8 Claim(s) 9 is/are objected to. 8 Claim(s) are subject to restriction and/or election requirement. Application Papers 9 The specification is objected to by the Examiner. 10 The drawing(s) filed on is/are: a accepted or b objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing shect(s) including the correction is required if the drawing(s) is objected to See 37 CFR 1.121(d). 11 The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b Some * c) None of: 1 Certified copies of the priority documents have been received in Application No 3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1 Notice of Praftsperson's Patent Drawing Review (PTO-948) 3 Information Discosure Statement(s) (PTO-1449 or PTO/SB08) 5 Notice of Informal Patent Application (PTO-152)	1) Responsive to communication	n(s) filed on <u>21 A</u>	<u>pril 2006</u> .		·					
Closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 1,1-5-18 and 20 is/are allowed. 6) Claim(s) 1,3-6 and 10 is/are rejected. 7) Claim(s) 9 is/are objected to. 8) Claim(s) 9 is/are objected to. 8) Claim(s)	,									
Al) Claim(s) 1,3-6,9-11,15-18 and 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 11,15-18 and 20 is/are allowed. 6) Claim(s) 1,3-6 and 10 is/are rejected. 7) Claim(s) g is/are objected to. 8) Claim(s) are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) The drawing(s) filed on is/are: a) copie or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some of None of: 1. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in Application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Citad (PTO-892) 1) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB00)	•									
4)	closed in accordance with the	practice under <i>E</i>	x parte Qua	yle, 1935 C.D. 11, 4	53 O.G. 213.					
4a) Of the above claim(s) is/are withdrawn from consideration. 5) □ Claim(s) 11.15-18 and 20 is/are allowed. 6) □ Claim(s) 9 is/are objected to. 7) □ Claim(s) 9 is/are objected to. 8) □ Claim(s) 9 is/are objected to. 8) □ Claim(s) 9 is/are objected to restriction and/or election requirement. Application Papers 9) □ The specification is objected to by the Examiner. 10) □ The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) □ All b) □ Some * c) □ None of: 1. □ Certified copies of the priority documents have been received. 2. □ Certified copies of the priority documents have been received in Application No, 3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) □ Notice of Praftsperson's Patent Drawing Review (PTO-948) 3) □ Information Disclosure Statement(s) (PTO-1449 or PTO/5B/08) 5) □ Notice of Informa Patent Application (PTO-152)	Disposition of Claims									
5) ☐ Claim(s) 11.15-18 and 20 is/are allowed. 6) ☐ Claim(s) 1.3-6 and 10 is/are rejected. 7) ☐ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) 9 is/are objected to restriction and/or election requirement. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/5B/08) 5) ☐ Notice of Informal Patent Application (PTO-152)	4) Claim(s) <u>1,3-6,9-11,15-18 and</u>	<u>d 20</u> is/are pendir	ng in the app	lication.						
6 Claim(s) 1,3-6 and 10 is/are rejected. 7)	4a) Of the above claim(s)	is/are withdrav	wn from cons	ideration.						
T) ☐ Claim(s) 9 is/are objected to. 8) ☐ Claim(s) are subject to restriction and/or election requirement. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) ☐ Notice of Informal Patent Application (PTO-152)										
Application Papers 9) The specification is objected to by the Examiner. 10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Notice of Informal Patent Application (PTO-152)	·	ejected.								
Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☒ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☒ All b) ☐ Some * c) ☐ None of: 1. ☒ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☒ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) ☐ Notice of Informal Patent Application (PTO-152)	· — · · · – · · ·	restriction and/o	or election rec	uirement.		1				
9) The specification is objected to by the Examiner. 10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some coll None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5 Notice of Informal Patent Application (PTO-152)	0) are easyest to			,						
10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of References Cited (PTO-892) Attachment(s) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) ☐ Notice of Informal Patent Application (PTO-152)	Application Papers									
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) Notice of Draftsperson's Patent Drawing Review (PTO-1449 or PTO/SB/08) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. Paper No(s)/Mail Date. Notice of Informal Patent Application (PTO-152)		·								
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) Notice of Informal Patent Application (PTO-152)	· — • • • • • • • • • • • • • • • • • •	•	•	=						
Priority under 35 U.S.C. § 119 12) △ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) △ All b) ─ Some * c) ─ None of: 1. △ Certified copies of the priority documents have been received. 2. ─ Certified copies of the priority documents have been received in Application No 3. ─ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) △ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)										
Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)										
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	· · · · ·	•								
a)	•	`alaim for foreign	. mriority unde	- 25 II S C & 110/a	. (d) or (f)					
1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 1 ☐ Notice of Informal Patent Application (PTO-152)	' -	•	i priority unde	si 55 0.5.0. § 119(a)-(u) or (i).	•				
2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) Notice of Informal Patent Application (PTO-152)	,		s have been	received.						
application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)										
* See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) * See the attached detailed Office action for a list of the certified copies not received. 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. Paper No(s)/Mail Date. Notice of Informal Patent Application (PTO-152)	3. Copies of the certified of	copies of the prior	rity documer	ts have been receiv	ed in this National S	Stage				
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. 5) Notice of Informal Patent Application (PTO-152)	, .		*							
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. 5) Notice of Informal Patent Application (PTO-152)	* See the attached detailed Offic	e action for a list	of the certific	ed copies not receive	ed.					
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. 5) Notice of Informal Patent Application (PTO-152)										
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date. 5) Notice of Informal Patent Application (PTO-152)		•								
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date. Notice of Informal Patent Application (PTO-152)	<u> </u>									
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) Notice of Informal Patent Application (PTO-152)		aview (PTO 049)	•							
		-1449 or PTO/SB/08)				-152)				

Art Unit: 2879

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 10, 2006 has been entered.

Claims 1, 3-6, 9-11, 15-18, and 20 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. (US 2002/0113552).

Regarding claim 1, Juestel teaches a plasma display panel comprising a fluorescent layer (Fig. 1,9) that includes a red phosphor pattern (Page 1, Paragraph [0003]), a green phosphor pattern (Page 1, Paragraph [0003]), and a blue phosphor pattern (Page 1, Paragraph [0003]), the red phosphor pattern containing Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu (Page 2, Paragraphs [0023]-[0024]). Juestel also teaches wherein

Art Unit: 2879

the red phosphor pattern contains Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu of "up to 100% of $Y(V.P)O_a$: Eu" or "up to 100% of $(Y.Gd)BO_3$: Eu" (Page 3, Paragraph [0041]); this includes the required 20-80% by weight of Y(V,P)O₄:Eu. And, Juestel teaches "the use of two phosphors which emit the same color in one and the same phosphor layer makes it possible to reduce or mutually compensate the undesirable properties of the phosphors" (Page 1, Paragraph [0010]). Juestel fails to teach wherein the red color purity ranges from 0.657 to 0.670 for an x chromaticity coordinate value and from 0.322 to 0.332 for a y chromaticity coordinate value, as in claim 1. However, the chromaticity values for $Y(V,P)O_4$: Eu are: x=0.662, y=0.328; this is shown in Table 3. The chromaticity values for (Y,Gd)BO₃:Eu are: x=0.641, y=0.356; this property is disclosed by the Kasei-Optonix website (of record). Since the properties of the red phosphor pattern depend on the quantity of each phosphor in the layer (Fig. 3, Table 5) it would be obvious to one of ordinary skill in the art to modify the percentages of Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu in the phosphor layer of Juestel to have the chromaticity coordinates specified in claim 1.

Regarding claim 3, Juestel further discloses wherein the amount of $Y(V,P)O_4$:Eu is in the range of 50-80% by weight based on the total weight of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 3, Paragraph [0041]).

Claims 4-6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. (US 2002/0113552) in view of Sisneros (US 3631284).

Art Unit: 2879

Regarding claims 4 and 10, Juestel teaches a fluorescent layer that includes a red phosphor pattern (Page 1, Paragraph [0003]), a green phosphor pattern (Page 1, Paragraph [0003]), and a blue phosphor pattern (Page 1, Paragraph [0003]), wherein the plasma display panel is without a color-compensating filter (Juestel does not disclose a color-compensating filter), the red phosphor pattern contains Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu (Page 2, Paragraphs [0023]-[0024]). Juestel teaches wherein the red phosphor pattern contains Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu of "up to 100% of Y(V,P)O₄:Eu" or "up to 100% of (Y,Gd)BO₃:Eu" (Page 3, Paragraph [0041]). Juestel also teaches "the use of two phosphors which emit the same color in one and the same phosphor layer makes it possible to reduce or mutually compensate the undesirable properties of the phosphors" (Page 1, Paragraph [0010]). Juestel fails to teach wherein the red light afterglow decay time is 4.0-8.8 ms, as in claim 4. Juestel fails to teach wherein the red light afterglow decay time is 4.0-8.0 ms, as in claim 10. Juestel also fails to teach wherein x chromaticity values for red are 0.663 to 0.670 and the y chromaticity values for red are 0.322 to 0.332, as required by claim 4. However, the afterglow decay value for Y(V,P)O₄:Eu is 3.5 ms; this is shown in Table 3. The afterglow decay value for (Y,Gd)BO₃:Eu is 11 ms; this property is disclosed by the Kasei-Optonix website (of record). Since the properties of the red phosphor pattern depend on the quantity of each phosphor in the layer it would be obvious to one of ordinary skill in the art to modify the percentages of Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu in the phosphor layer of Juestel to get the afterglow decay values specified in claim 4. Sisneros provides evidence that Y(V,P)O₄:Eu phosphors have chromaticity values of x=0.67 and y=0.33

Art Unit: 2879

(Column 3, see table). Since the properties of the red phosphor pattern depend on the quantity of each phosphor in the layer (Fig. 3, Table 5) it would be obvious to one of ordinary skill in the art to modify the percentages of Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu in the phosphor layer of Juestel to have the chromaticity coordinates specified in claim 4.

Regarding claim 5, Juestel further discloses wherein the amount of $Y(V,P)O_4$:Eu is in the range of 20-80% by weight based on the total weight of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 3, Paragraph [0041]).

Regarding claim 6, Juestel further discloses wherein the amount of Y(V,P)O₄:Eu is in the range of 50-80% by weight based on the total weight of Y(V,P)O₄:Eu and (Y,Gd)BO₃:Eu (Page 3, Paragraph [0041]).

Allowable Subject Matter

Claims 11, 15-18, and 20 are allowed.

Regarding independent claim 11, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 11, and specifically comprising the limitation wherein the combined red color purity ranges from 0.657 to 0.670 for a chromaticity coordinate value x and from 0.322 to 0.327 for a chromaticity value y.

Regarding claims 15 and 20, claims 15 and 20 are allowable for the reasons given in claim 11 because of their dependency status from claim 11.

Regarding independent claim 16, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 16, and

Art Unit: 2879

specifically comprising the limitation wherein the combined red color purity ranges from 0.660 to 0.670 for a chromaticity coordinate value x and from 0.322 to 0.327 for a chromaticity value y.

Regarding claims 17-18, claims 17-18 are allowable for the reasons given in claim 16 because of their dependency status from claim 16.

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anne M Hines Patent Examiner

Art Unit 2879